

IN THE SPECIFICATION

Please amend the Title on page 1, line 3 as follows:

Image Sensor With Deformation Preventing Device
and Image Input/Output Apparatus Using Same

Page 6, between lines 8 and 9, please insert the following heading:

SUMMARY OF THE INVENTION

Page 6, please delete line 18 in its entirety.

Please replace the paragraph at page 9, lines 6 to 8, with the following rewritten paragraph:

~~FIG. 8~~ FIGS. 8(a) and 8(b) are sectional views ~~is a sectional view~~ showing a structure of an image input/output apparatus provided with the contact type image sensor of the invention;

Please replace the paragraph at page 9, lines 9 to 11, with the following rewritten paragraph:

~~FIG. 9~~ FIGS. 9(a) and 9(b) are sectional views ~~is a sectional view~~ showing a structure of an image input/output apparatus provided with the contact type image sensor of the invention;

Please replace the paragraph at page 12, line 15 to page 13, line 13, with the following rewritten paragraph:

FIG. 5 is an explanatory view showing a first method for fixing the deformation rectifier 14 to the image sensor 1. In FIG. 5, 30 is a plane. Note that, in FIG. 5, the same reference character as that of FIG. 1 designates the same or corresponding part and hence is not explained. Prior to fixing the deformation rectifier 14 to the image sensor 1, an external force is applied to the image sensor 1 with the image sensor 1 is placed on a plane 30, thereby rectifying deformation or warp of the image sensor 1. Then, a deformation rectifier 14 is fixed to the image sensor 1 rectified in shape. As explained above, ~~by placing~~ the image sensor 1 is placed on a plane 30 and an external force is applied to rectify deformation or warp, in which state the deformation rectifier 14 is fixed. This can remove the deformation or warp ~~existed~~ existing in the post-manufacture image sensor 1 in advance of being mounted to the image input/output apparatus. Meanwhile, if the rigidity of the deformation rectifier 14 is higher than the rigidity of the image sensor 1, it is possible to prevent new deformation from being caused by the weight of the image sensor 1. Accordingly, prior to mounting of the deformation rectifier 14, the image sensor 1 in a state can be kept rectified of deformation or warp for a long term.

Please replace the paragraph at page 15, line 6 to page 16, line 9, with the following rewritten paragraph:

FIG. 7 is an explanatory view showing a third method for fixing the deformation rectifier 14 to the image sensor 1. In FIG. 7, the same reference numeral as that of FIG. 6 designates the same or corresponding part and hence is not explained. Before fixing the deformation rectifier 14 to the image sensor 1, the spacer 31 is inserted between the lengthwise center of the image sensor positioned so that the glass plate 3 is directed up ~~and~~

on the plane 30. Then, an external force is applied to both lengthwise ends of the image sensor 1 supported at the lengthwise center by the spacer 31. By this operation, a predetermined amount of intentional deformation is given to the image sensor 1. As shown by the arrow in FIG. 7, by applying an external force to both lengthwise ends of the image sensor 1, the image sensor 1 can be given a deformation in its ~~the state~~ the center or its vicinity, thus being warped in a convex form. The deformation rectifier 14 is fixed to the image sensor 1 thus given with intentional deformation. Similarly to the second fixing method explained while referring to FIG. 6, the state in which the image sensor 1 is deflected can be kept for a long term by fixing the deformation rectifier 14 to the image sensor 1 intentionally deflected by a predetermined amount. More specifically, if attached to the image input/output apparatus such that the glass plate positions up, because the direction of deformation due to the self-weight of the image sensor 1 is reverse to the direction of intentional deformation by the above method, the focal light path length can be kept from varying.

Please replace the paragraph at page 16, line 19 to page 17, line 13, with the following rewritten paragraph:

FIG. 8 is a sectional view showing a structure of the image input/output apparatus using the explained contact type image sensor. In FIG. 8, 16 is an image input/output apparatus, 17 is a paper tray, 18 is a paper feed roller, 19 is a paper transport roller, 20 is a paper eject roller, 21 is ~~[[a]]~~ an eject paper tray, and 27 is an image information output section to output read-out image information to the outside. The broken line between the paper tray 17 and the eject paper tray 21 in the upper part of FIG. 8A ~~8(a)~~ 8(a) designates a route to transport a document. Note that, in FIG. 8, the same reference numeral as that in FIG. 1 designates the same or corresponding part and hence is not explained. The image sensor 1

shown in FIG. 8 is provided with the deformation rectifier 14 thus reinforcing the lengthwise rigidity of the image sensor 1. The image sensor 1 is attached on the image input/output apparatus 16 such that the glass plate 3 is directed down. A document is to be transported to be in a position spaced by a predetermined distance X from the glass plate 3.

Please replace the paragraph at page 17, line 14 to page 18, line 4, with the following rewritten paragraph:

As shown in FIG. ~~8B~~ 8(b), the glass plate 3 of the image sensor 1 and the document to be read are separated by the predetermined distance X. More specifically, the paper transport roller 19 is arranged in such a position that the document is transported to be in the position separated by the predetermined distance X from the glass plate 3. The distance X between the glass plate 3 and the document is about 0.4 mm-1.0 mm. The image sensor is set in focus such that the resolution of image reading is the highest when the glass plate 3 and the document are spaced by the predetermined distance X. Namely, precise image reading is possible unless there is no change in the predetermined distance X between the document and the glass plate 3 or in the focal length including the distance of from the glass plate 3 to the sensor IC (not shown).

Please replace the paragraph at page 19, line 19 to page 20, line 8, with the following rewritten paragraph:

As shown in FIG. ~~9B~~ 9(b), the glass plate 3 of the image sensor 1 and the document to be read are spaced by the predetermined distance X. More specifically, the paper transport roller 24 is arranged in such a position that the document is transported to be in the position at the predetermined distance X from the glass plate 3. The distance X between the glass plate 3 and the document is about 0.4 mm-1.0 mm. The image sensor is set in focus such that the

resolution of image reading is the highest when the glass plate 3 and the document are spaced by the predetermined distance X. Namely, precise image reading can be made unless there is no change in the predetermined distance X between the document and the glass plate 3 or the focal length including the distance from the glass plate 3 to the sensor IC (not shown).